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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/516,571	05/16/2005	Takuhiro Kondo	Got 202NP	5502

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EXAMINER	
NGUYEN, VU Q	
ART UNIT	PAPER NUMBER
3683	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/07/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/516,571	KONDO ET AL.	
	Examiner	Art Unit	
	Vu Q. Nguyen	3683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 May 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 December 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/02/2004, 04/10/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: "21" in Fig. 1. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to because the lead-line for reference character "2a" in Fig. 1 is misdirected. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the

replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:

On page 3, 2nd paragraph, 2nd sentence, "lower bracket 32" should be --lower bracket 62--, and "supporting frame 30" should be --supporting frame 60--.

On page 4, 1st full paragraph, "mounting eye 44" should be --mounting eye 41--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

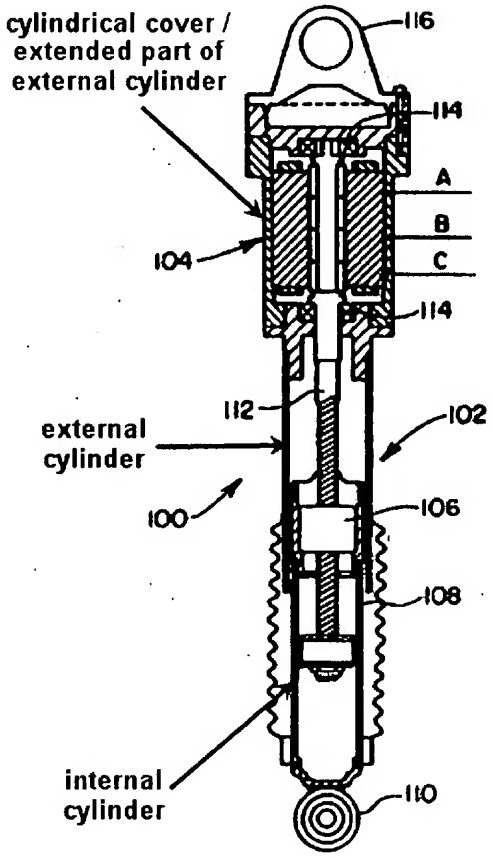
3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5070284 (Patil et al.).

Regarding **claim 1**, Patil et al. disclose an electromagnetic shock absorber comprising: a shock absorber body (100) which makes telescopic motion in response to an input from outside; a ball screw mechanism (102) which is arranged at the shock absorber body (100), converts the telescopic motion into rotary motion (column 5, lines 1-10), and is composed of a ball nut (106) and a screw shaft (112); a motor (104) which is provided coaxially with the shock absorber body (100) and generates electromagnetic resistance to oppose against the rotary motion to be input into a rotary shaft (carried by upper end of screw shaft 112; column 5, lines 11-24) of the motor (104); and a cylindrical member which covers the shock absorber body (100) and the motor (104) from outside and whose part to cover the motor (104) also serves as a motor frame (Fig. 1); **[claim 2]** the shock absorber body (100) has an external cylinder and an internal cylinder to be slidably inserted into the external cylinder; a cylindrical cover having the frame of the motor (104) is coaxially connected with an upper part of the external cylinder; and the external cylinder and the cover constitute the cylindrical member (see figure below); **[claim 3]** the shock absorber body (100) has an external cylinder and an internal cylinder to be slidably inserted into the external cylinder; an upper part of the external cylinder extends so as to cover the motor (104) and the frame of the motor (104) is formed at an extended part of the external cylinder; and the cylindrical member is constituted by the external cylinder (see figure below); **[claims 4 and 7]** the rotary shaft (carried by upper end of screw shaft 112) of the motor (104) is

rotatably supported at its both ends by a pair of bearings (114) installed at the external cylinder.



Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

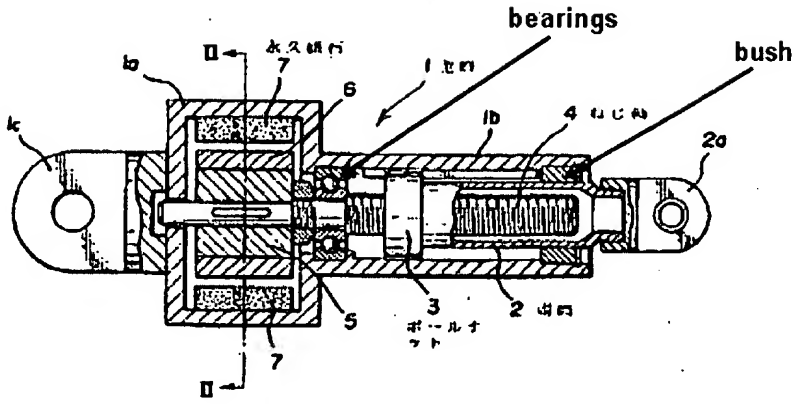
> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5070284 (Patil et al.) in view of Japanese Patent Document JP 62-004937 (Kazuo).

Patil et al. disclose an electromagnetic shock absorber as applied to claims 1-4 and 7 above. Patil et al. further disclose that **[claim 5]** the ball nut (106) of the ball screw mechanism (102) is fixed to an upper part of the internal cylinder (see figure above) and a screw shaft (112) to be spirally engaged with the ball nut (106) is connected with the rotary shaft (carried by upper end of screw shaft 112) of the motor (104).

Patil et al. do not disclose expressly that **[claim 5]** an outer circumference of the internal cylinder is slidably supported by a bush installed at an inner circumference of a lower end of the external cylinder; and a halfway point of the screw shaft is rotatably supported through bearings installed inside the external cylinder.

Kazuo discloses in Figs. 1 and 3 a damper comprising an internal cylinder (2) slidably supported by a bush at the lower end of an external cylinder (1b). Kazuo also discloses a screw shaft (4) rotably supported through bearings installed inside the external cylinder (1b). See figure below.



At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a bush and bearings as taught by Kazuo within the electromagnetic shock absorber of Patil et al. The suggestion/motivation for doing so would have been to provide better alignment and support between the internal and external cylinders as well as the screw shaft and the external cylinder, which facilitates proper functioning of the shock absorber.

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5070284 (Patil et al.) in view of Japanese Patent Document JP 62-004937 (Kazuo) as applied to claim 5 above, and further in view of Japanese Patent Document JP 2001-334982 (Tadashi et al.).

Patil et al. and Kazuo disclose an electromagnetic shock absorber and the use of a bush and bearings respectively, as applied to claim 5 above.

Patil et al. or Kazuo do not disclose expressly that **[claim 6]** the screw shaft and the rotary shaft are connected through a planetary gear mechanism which decelerates and transmits a rotation of the screw shaft to the rotary shaft.

Tadashi et al. disclose a damper comprising rotary shafts (4, 16) connected through a planetary gear mechanism (17, 19) with a large reduction gear ratio (Figs. 1 and 2; paragraphs 0021-0024).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to further use a planetary gear mechanism as taught by Tadashi within the electromagnetic shock absorber of Patil et al. The suggestion/motivation for doing so would have been to reduce and transmit the rotational speed of the screw shaft to the rotary shaft so that the rotary shaft rotates at a more desirable speed. The ability to select a gear ratio also provides better control in this regard. Furthermore, a planetary gear mechanism would save space as compared to other gear mechanisms.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent No. 4815575 (Murty) discloses an electric, variable damping vehicle suspension. U.S. Patent No. 5027048 (Masrur et al.) discloses a field oriented motor controller for electrically powered active suspension for a vehicle. U.S. Patent No. 5028073 (Harms et al.) discloses a dynamic vehicle suspension system including an electronically commutated motor. U.S. Patent No. 5060959 (Davis et al.) discloses an electrically powered active suspension for a vehicle. U.S. Patent No.

5091679 (Murty et al.) discloses an active vehicle suspension with a brushless dynamoelectric actuator. U.S. Patent No. 5434782 (Henry) discloses a suspension system state observer. U.S. Patent No. 5491633 (Henry et al.) discloses a position sensor for electromechanical suspension. U.S. Patent No. 5678847 (Izawa et al.) discloses an active suspension system.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vu Q. Nguyen whose telephone number is (571) 272-7921. The examiner can normally be reached on Monday through Friday, 8:30 AM to 5:00 PM, EST..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James McClellan can be reached on (571) 272-6786. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JAMES MCCLELLAN
SUPERVISORY PATENT EXAMINER
3/2/07